

Jacob Walden

TERMS—Three Dollars per annum, payable in advance.

**THE
SOUTHERN AGRICULTURIST,**

FOR THE PROMOTION

OF

**AGRICULTURE, HORTICULTURE, RURAL AND
DOMESTIC ECONOMY**

IN THE

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The Southern Agriculturist.

(NEW SERIES.)

Vol. VI.

FOR AUGUST, 1846.

No. 8.

From the Columbia South Carolinian.

AN AGRICULTURAL ADDRESS.

DELIVERED BY THE HON. JOEL R. POINSETT, BEFORE THE STATE
AGRICULTURAL SOCIETY, NOVEMBER 27TH 1845.

Mr. President and Members of the State Agricultural Society:

The satisfaction of addressing you on this occasion is tempered by mournful recollections. At your last Anniversary celebration, you listened to one who was endeared to us all by his many amiable and estimable qualities. Our friend and companion stood where I now stand, and in all the pride of conscious usefulness, and with all the ardour of an ennobling cause, addressed you with equal zeal and ability, on the great interests we are associated together to promote. He has departed from among us; but the impulse he gave to scientific agriculture, and his endeavors to advance its success in South-Carolina will be long remembered. They have already produced important results, and cannot fail in the end to prove still more beneficial to the State.

The most fitting tribute we can pay to his memory is to carry forward his views and to complete the great work of fully surveying and thoroughly examining every District of the State, in order that its agricultural resources may be discovered and developed. The concluding remarks of his excellent discourse showed how much he had this important subject at heart; and the whole tenor of that instructive production evinced his earnest desire to advance the agricultural interests of his native State, and his exalted estimate of their value and importance.

Nor did he appreciate them too highly; the most gifted poets, the profoundest thinkers, and the ablest and most eloquent writers of ancient and modern times, unite in placing agriculture above all other pursuits of life. They characterize it as the best and most virtuous, and the most worthy of a free man. But it is more than all this, it is the most useful occupation in life; to the farmer, to that class set apart to till the soil, all other arts owe their origin, and rely for their existence and prosperity; and on the extension and improvements of agriculture, the creation and condition of commerce, manufactures, and all the arts of life mainly depend. So true is this, that the wealth and power of a nation may be correctly

estimated by its progress in husbandry. Every improvement in cultivation, which diminishes the amount of labor employed in producing the necessary alimentary and manufactural articles, releases and supports a proportionate number of persons to be employed in other occupations, so that the number of sailors, soldiers, artisans, mechanics and operatives of every description depends upon the knowledge and industry of the tillers of the soil; and the condition and progress of its commerce and manufactures, and its comparative wealth and resources, will be in the inverse ratio of the proportion of labor employed in raising food for the remainder of the population. This rule is applicable chiefly to populous countries where all the good lands are in culture: for, with us in America, the surplus labor released by improved processes of husbandry, may find employment in bringing into cultivation new lands; and it likewise applies only to nations, which, from a proper sense of independence, and a due regard to their most essential interests, rely upon the resources of their own soil for their own bread. This forms the only exception I know of, to the great principle of free trade, "buy where and what you can buy cheapest, and sell where and what you can sell dearest." Without the means of subsistence within itself, a nation would be liable at all times to the dangers which arise from the frequent fluctuations in price, and the uncertain supply of foreign bread corn; and in the event of war, be exposed to its attendant miseries, pestilence and famine.

Our chief efforts ought therefore to be directed to improve the quality and increase the quantity of such productions of the earth as constitute the food of man. Never let planters and farmers, or the nation of which they form a part, be satisfied with raising exactly enough for man and beast; let them strive to produce abundance and to spare at home, and to furnish an overplus to export abroad. Food, when abundantly produced in a country, will be dealt out with an unsparing hand, not only banishing poverty and distress from the land, but improving the moral and physical condition of its inhabitants. It is a well established fact, that the scarcity or abundance of food, has a powerful effect in modifying both the appearance and the mental faculties of man. Mark the diminutive statue and stupid expression of those who are born and brought up in misery and want; and compare them with the lofty presence and noble features of those who enjoy from their childhood abundance of wholesome food. It is our duty equally, as agriculturists and patriots, to keep this constantly in view, for a miserable half starved population may be enslaved by a better fed and more highly civilized class of their fellow citizens. Whereas, a well fed, well clothed, well educated people, will maintain their ascendancy and their power forever. Buffon says, "coarse, unwholesome and ill prepared food makes the human race degenerate; all those people who live miserably, are ugly and ill made." He might have added, that they are abject, ignorant and slavish. Far be from us then the miserable calculations of the minimum quantity of food that is

required to subsist a family: far be from us the scenes of squalid want which it is so painful to read of, and so harrowing to witness in less favored lands; and let no sordid love of gain prevent us from raising provisions in profusion.

If these considerations do not induce us to employ a larger portion of our agricultural capital in this manner, I shall not regret if the reduced price of some manufactural article should compel us to do so; for I regard it to be more essentially important to the true interests of the country; that, under all circumstances, and in all events, every individual in the State should have an abundance of wholesome food, warm raiment, and good shelter from the weather, than that those who are rich in such blessings, should by the high price of any manufactural article, be enabled to clothe themselves in more costly garments, or to fare more sumptuously every day. It is recorded, that in China, where there exists an overflowing population, the avarice of the agriculturists, stimulated by the high price of cotton, occasioned a famine; and the Government was compelled to direct that a greater proportion of the land should be thrown into the cultivation of grain. The competition with much better lands, and the low price of that article, may produce with us the effects of such an edict, and compel us to devote more of the labor of the State to the provision crop than has been hitherto done.

This subject has been rendered more deeply interesting to us all, from the condition of our State at this time. It has pleased Almighty God to afflict the land with a general dearth, and while we submit with resignation to His dispensations, let us endeavor to turn them to a profitable account, by directing the attention of our fellow-farmers to grain crops, to the cultivation of river bottoms, and to the irrigation of upland fields.

A very large proportion of the upper districts which have suffered from drought this season, is capable of being irrigated by the mountain streams that flow through them. I am aware, that to execute such works, require some science. Levels must be taken, in order to determine at what point the river should be bled to water the fields below; but I believe an Engineer, who would make himself master of the subject of irrigation, might confer a lasting benefit upon the State, and at the same time, find profitable employment for himself. Wherever lands are irrigated, the agricultural products are independent of seasons; and the works once constructed, the soil, with less labor, produces four fold.

If we sprang from any other nation than the English, our country would have been more generally cultivated by the use of water.

In that weeping climate, a good system of drainage was supposed to be all that was required; but recently, the farmers even there have sought to avail themselves of every facility that presents itself to water their meadows. Although, in that country, irrigation is confined to the improvement of meadows alone, in many other portions of the world, all kinds of produce are raised by water culture.

In Spanish America, it was extensively practised before the conquest, and water continues to be used as a substitute for manure throughout the whole of that extensive country. Boussingault says, that he has seen rich crops of maize (Indian corn) growing upon the plateau of the Andes of Quito, in a sand that was nearly moving, but which was abundantly and dexteriously watered. In northern Chili, no rain falls during the summer, but by means of their extensive canals of irrigation, the lands are rendered abundantly productive. In Peru it never rains at all. Yet the sugar cane, Indian corn, and a variety of fruits are successfully cultivated there, by the judicious use of their mountain streams.

In Persia the land is peculiarly arid, but still a luxurious vegetation is produced by the use of a moderate supply of water even under the rudest cultivation. There are spots in the Desert between Teheran and Tabriz, where, by the aid of water, the country is one carpet of verdure.

In China, where they use the utmost diligence in collecting manure, turning every thing to account, and even scraping together the hair that is shaven weekly from the scalps of their numerous male population, and which forms no inconsiderable ingredient in their composts: they do little more than enrich their extensive gardens with them, and are obliged to depend upon the water of their rivers and streams for the cultivation of their fields.

In their contrivances for raising it from the rivers where the banks are high, the Chinese display great industry and skill, using for that purpose wheels, long levers, swinging buckets, and the like. They dam up the mountain springs and lead the water along terraces levelled on the sides of the hills, or carry it across the plains in small canals; and there, as in many other parts of Asia, water is in places raised by a wheel worked by oxen from the bottom of deep wells. In Spain, Portugal, the south of France, and the north of Italy, the lands susceptible of this improvement are all irrigated, and those that do not enjoy this advantage are comparatively valueless, whereas here, where the facilities are so great, we only use water for the cultivation of rice.

During the past summer, when our soil was parched and our crops perishing, springs were left to gush out, and streams to flow fruitlessly over their stony beds, when their waters might have been used to spread fertility over the land.

I ought not to omit mentioning that *irrigation* cannot be successfully practised, without a system of perfect drainage.

The fine succulent grasses that yield good hay will not grow on wet soils, nor can any valuable produce be raised where the land cannot be laid dry.

I earnestly hope that this subject will engage the serious attention of the Society, and that the sufferings and losses experienced by our fellow-citizens this year, may lead to the adoption of a system which cannot fail to be permanently useful.

Although I regard an abundant product of bread corn a matter of the greatest importance to the welfare of a State, and which should be urged upon the people with more than common earnestness, I never desire to see even this interest fostered by any exclusive act of legislation. Let it be left with all others free from monopolies, and protection to the good sense and exertions of the people, and its own intrinsic importance. We have before us such a warning of the evils produced by the action and re-action of the protective policy in the matter of bread-corn on the condition of the working classes in England, as will, I trust, deter us from following such a pernicious example.

The *protective policy* applied to manufactures is bad enough; but when it doles out to every laborer or workman, the exact amount of food which will enable him to perform his daily task, it interferes cruelly and unjustly with individual prosperity and happiness. The system of taxes and tythes, the minute subdivision of labor, and the exact graduation of wages to subsistence which have produced the poor laws and the corn laws in Great Britain, are, the bitter fruits of the protective system in that country. There the people are compelled to pay a higher price for bread-corn than it would cost if procured from abroad, because the parochial and municipal regulations of that country, press more heavily upon the agricultural than upon any other interests. And if the agricultural products of other States, where no such burthens exist, were suffered to be brought into competition with the English farmer, he might be driven from the home market.

Thus it appears that the farmers are enabled to pay the taxes levied upon them, to support the poor and the church, by the protection they receive from Government, against foreign competition, while the laborer is too often reduced to become a pauper, and a burthen upon the farmer, by this enhancement of the price of food. And yet, however absurd and oppressive this system is acknowledged to be, it is found, in practice, extremely difficult to get rid of. All lament the evil, but to apply a remedy which will not affect injuriously some other vital interest of the country, is a problem their wisest Statesmen have not been able to solve. Such are the dreadful effects of these unwise measures of protection; they furnish a pregnant example, and a solemn warning to us; and should teach our legislators to avoid the first step in a system which inevitably lead to great suffering, and perhaps to revolution.

It is now acknowledged in Great Britain, that unbounded freedom of trade is the true policy of the country; but it is found difficult, if not impracticable, to act upon this principle, on account of the immense amount of private interests which has grown up under the restrictive system. They acknowledge the truth of the doctrines of free trade; they renounce the errors of their ancestors: they are disposed to impose new duties for the purpose of revenue alone, and not with a view of protecting any one particular branch of industry at the expense of another; but they find it impossible at

once to abolish a system so deep rooted, or effectually to remedy evils which are producing the most terrible consequences, and stirring up the people to mutiny. In the commencement of our political career, we ought to profit by such lessons, and take warning by the sufferings and errors of the nations which have preceded us.

One of the principle objects of our solicitude ought to be, to instruct the husbandman how to raise the greatest amount of produce with the least expenditure of labor. This, as I said before, is the secret of a nation's comparative wealth and resources; and it is equally that of the farmer's comforts and enjoyments. If the farmer be compelled to work from the dawn of day to dark night, with all his family to aid him, in order to feed and clothe those who are dependent upon his exertions for their daily support, there will be no leisure for the cultivation of his own mind, or the education of his children. How often do we hear the farmer say in excuse for not sending his children to school, "I cannot do without their services in the field." Now there can be no doubt that a proper mixture of labor with intellectual pursuits is mentally and physically advantageous: and the farmer, while he avails himself of the services of his sons in the field, would best forward his own interests, by sending them to school during the intervals of labor.

He ought to be instructed to avail himself of all the improvements in agriculture which may abridge that labor, and enable him to dispense with the services of his children at certain periods of the year, and at given hours of the day.

I shall make no apology for dwelling upon this subject; it is vitally important to the object this Society has in view. So important indeed do I regard it, that, in my opinion, all our efforts to improve the cultivation of the soil will be unavailing, unless we succeed in cultivating the understanding of the people. We must fertilize the mind before we can expect to spread fertility over the land. It is too much the custom to despise book farmers: it is said that the agriculturists who devote themselves most successfully to cultivation, write very little, and those who spend very little time in that way, on the contrary, write a great deal.

True we must go to practical men for information, and gather it from their experience; but the book farmer must diffuse the information thus gathered, among the people at large.

We must instruct the practical farmer how to apply the discoveries of scientific men to the test of experiment, and we must see that his children be enabled, by a good education, to drink at the same source of knowledge with ourselves, and learn to practice approved applications of science to the most useful of the arts of life.

So important, so absolutely necessary do I deem education to be to the prosperity of a State, that I could never find in my heart to disapprove the decree of the Prussian Government, which compels every parent to send his children to school. It is despotic to be

sure; but the result is favorable to freedom, and highly beneficial to the laboring classes of that country.

With us, the only despotism that can be practised or tolerated, is that of public opinion; and it ought to speak trumpet-tongued to all who neglect this sacred duty to their offspring. This is not the place or the occasion to enlarge upon the fatal effects of ignorance upon the well-being of nations whose institutions are founded on the intelligence of the people; but I cannot forbear to bring to your view its effects upon the agriculture of the State.

In those countries where science has contributed most to the advancement of husbandry, the land is for the most part in the hands of large proprietors, and the farmer or tenant is compelled, by the terms of his lease, to adopt and follow out such improvements in cultivation as have been found by experience to augment the produce of the land, while at the same time they keep it in heart and even increase its fertility. It matters not whether he is educated or ignorant; he follows the routine indicated by his agreement with the landlord, and the whole country is well cultivated. Here, in America, on the contrary, the farmer is, for the most part, the proprietor of the land he cultivates, and is free to practice the methods he thinks best. His prejudices have to be removed, his understanding convinced, before you can induce him to abandon the path trodden by his fore-fathers and followed by his neighbors; and not only is it more easy to effect this where the person addressed is enlightened by education; but we have no other means of approaching the great body of the people but by addressing ourselves to their understandings through the medium of the press; so that we must teach the mass of the people to read, or all our efforts will be unavailing. Much has been done by the State to educate those who are destined to intellectual occupations. The establishment of this College, and the support of its able and learned Professors, enables us to educate our sons at home, which I regard as highly conducive to their future usefulness and happiness, as well as to the prosperity of the country. Those who are to rule the destinies of a State, and to give laws to its people, ought to be educated within its precincts, where they will form correct opinions of its peculiar polity and interests, and where they will become united to each other, and identified with the people by the endearing ties of early and intimate association. These advantages have been secured to us by the liberality of the Legislature, and we enjoy the fruits, and experience the benefits of this wise measure, in the talents and acquirements of the enlightened men that now sit in these Halls. But something more remains to be done, in order to diffuse the benefits of education among the people—among those who rely upon their daily labor for their daily bread. We have to overcome long existing prejudices, and to open their minds to an understanding of the great improvements made in husbandry by modern science; and how is this to be done, unless the farmers can, one and all, read your essays and instructions?

The large sum appropriated annually by the Legislature for Free Schools, from some cause or other has failed in its chief object. In the towns where the population is collected together in masses, and where the Trustees are both willing and able to attend to the duties confided to them, these schools have been well conducted, and produce beneficial results; but throughout the interior of the State, the system has not proved as beneficial as was expected. This is apparent from the lamentable fact disclosed by the census of 1840. A large portion of our fellow-citizens can neither read nor write, and all of us who move among the people, daily see examples of this deficiency.

The great importance of the subject to this Society induces me to avail myself of the only opportunity, which from my retired life, is likely to present itself, to state as briefly as possible, my views as to the probable means of carrying into effect the benevolent intentions of the Legislature.

Looking to those nations where the efforts of government to educate the people have been most successful, we find in every instance schools established for the purpose of forming teachers. A body of youth are instructed in the most approved methods of imparting knowledge, and before they are permitted to keep a school themselves, they learn thoroughly how to teach; for the possession of knowledge does not necessarily carry with it the art of imparting it to others.

The experience of other countries and our own reflections, must convince us of the wisdom and expediency of thus creating a class of men to be devoted to this useful and noble occupation. I cannot but think that to form such a body of teachers would do more towards educating the people, than to distribute any amount of money among persons, who too often and too readily undertake duties which they are incapable of performing. Parents and guardians would cheerfully tax themselves to contribute towards the support of such instructors; and I have no doubt in every instance it would be advisable to exact from them a small contribution towards the education of their children. An unwillingness to be entirely dependent on charity for any benefit is inherent in human nature; and it is a principle so strong in the breast of every republican, that it ought to be respected.

It appears to me very possible to combine Normal Schools, the distribution of funds among the districts, and the payment of a small sum by parents for the education of their children, in such a manner as to give to all the people of the State, an education in every respect fitted to render them good citizens and good farmers.

With a view to the latter object, the plain principles of agriculture might be taught in the primary schools, as is practised in some other countries, and the teachers instructed to avail themselves of every fitting occasion to communicate them to the people.

Every farmer in Carolina ought to be made acquainted with the process by which he may multiply the products of the soil, at the same time that he improves its quality, and augments its capability to yield its fruits with ever increasing abundance.

He should be taught to what extent the cultivation of culniferous crops in succession is injurious to land and what description of vegetation ought to intervene in order to restore its fertility, the necessity of rotations and their most advantageous order; the importance of setting apart a portion of his farm for pasturage, both to support his cattle and to give a rich dressing of green manure to his land when broken up for tillage; and above all, he should be urged by demonstrations and arguments addressed to his self-interest not to cultivate more land than he can manure and tend properly. Every man, especially if he can read and cypher, may be made to comprehend how much more advantageous it will be to raise one hundred bushels of corn from five acres of land than from ten acres. The difference of work and materials between fencing five acres and ten, and that of labor in ploughing, sowing, and harvesting, may be calculated to a fraction. He should be taught to estimate the real value of manures, that he may not be discouraged by their first cost, and to understand when he applies them, that he is placing capital in the ground, the interest of which is represented by the increased commercial value of the product of his fields. A very moderate acquaintance with arithmetic would enable him to ascertain the income arising from such an outlay, but to do this accurately, he must be made aware of the durable benefit of lime and some other mineral manures when applied to soils deficient in ingredients so essential to their fertility. The fertilizing effects of many substances that are generally thrown away, and wasted on a farm, ought to be pointed out to him. How often is the carcass of an animal exposed, to be consumed by birds of prey, and its bones left to bleach in the sun, when the former would enrich the manure heap, and the latter furnish to the soil the most important known fertilizing principle, the phosphate of lime, a material so essential to good husbandry, that it is imported into other countries at great cost, and contributes essentially to the improved condition of their agriculture.

We will venture to say that in no other cultivated country in the world are the carcasses of animals exposed to be devoured by the birds of the air and their bones left to bleach in the sun, or heaps of old leather, woollen rags, feathers and charcoal dust, left to encumber the earth, when if properly covered under it, they would enrich and fertilize the soil.

The farmer ought to be informed of the great importance of solid and liquid manures which he now casts away, and which in other countries are sold by the pound after being manufactured into poudrette and urate; and which he could render available by simply mixing them with sulphate of lime and sulphate of iron. He should

be instructed when he clears land, how to make the wood which he now destroys and wastes, contribute root, stem and branch to enrich the soil, by converting them into vegetable manure, ashes and charcoal : and above all, the vast importance of durable improvements should be instilled into his mind.

A comfortable dwelling, a good barn, smoke house, and other offices ; straight enclosures, made with cedar, lightwood, catalpa, sassafras or locust posts, or what is better still, good live hedges, instead of the clumsy unsightly worm-fences which enter into rapid decay, the moment they are laid down ; a good orchard and productive garden, with its bee palace yielding abundance of honey and wax ; every wall clustering with luscious grapes, and the whole homestead ornamented with flowers, and embellished as well as protected by shrubs and trees ; constituting a residence that would not be abandoned heedlessly, without cause and without regret.

Whereas, it too frequently happens, that the farmer, after cultivating his land carelessly for a few years, turns his back with disgust upon his worn out fields and washed hill sides, seamed with hideous gullies, upon his comfortless house, his falling barn, and decayed fences, and sets forth without one regret on his own part, or on that of any individual of his family, to seek a new home in a new country, there to begin the same career of waste, and lead the same life of unrequited toil, and to experience the same distressing results.

Living on the great line of communication with the Eldorado of these emigrants, I have seen many of them returning home, after a few years absence, disappointed and disheartened, because their heedless manner of cultivating the soil had produced the same consequences in the rich valleys of the waters of the Mississippi as in the less favored districts of their native State. The Roman poet, in speaking of happiness, says :

"Est ulubrisanimus si tibi non deficit æquus."

Happiness is to be found in the meanest village in the empire if you possess a well balanced mind, and I say to you, that a comfortable home, surrounded by all that makes life desirable, may be established in the rudest country, and an abundant subsistence extracted from the most ungrateful soil, if you possess industry and moderate skill. Does there exist any where a more barren soil than that which nature has bestowed on Flanders ? The unreclaimed lands of that country present an arid surface, covered with heath and stunted pine : and yet by persevering, well directed industry, the cultivated portion of it is converted into a garden, bearing in profusion every product required for the sustenance of man, as well as rich materials for manufactures and exportation.

It happened to me on one occasion to pass through that country, and to witness the wealth, comfort and abundance produced from a sterile soil by the unwearying efforts of intelligent industry ; and some months later to visit the fertile plains of Catania, in Sicily,

and to contemplate the squalid misery of the inhabitants of a region which was once the granary of Rome.

Flanders, so often the theatre of war, and always burthened with heavy taxes to support a long line of fortifications, a luxurious court, and a standing army, overcoming every obstacle and fertilizing a naturally sterile soil by persevering industry and admirable method ; and by indomitable energy, converting the wilderness into a happy home and an abundant source of wealth and comfort : whilst Sicily, with fewer political and none of these natural disadvantages to contend with, is badly cultivated and rendered the abode of poverty and wretchedness by the slothfulness and ignorance of its inhabitants. In Flanders, the whole country bears the impress of the vivifying industry and zealous enterprise of the people. It is traversed in every direction by lines of easy communication, furnished with manufactures in every town and every hamlet to work up the produce of its agricultural industry, providing the farmer with an abundant home market, while affording employment to a large portion of the population, wasting nothing, but working up and extracting value from materials which are considered in some countries as worthless refuse. Whereas Sicily, with its fine climate and fruitful soil, bears the impress of slothful neglect. No roads, no canals, none but the coarsest manufactures, the land carelessly tilled and yielding a scanty subsistence to the laborer. The estates belonging to religious corporations and to the nobility, form the only exception to these desolating effects of ignorance and idleness. In Sicily, where nature has been lavish of her choicest gifts, nothing met my view but signs and tokens of the luxurious wealth of the few, and of the unmitigated misery of the many ; whereas in Flanders, with its rude climate and arid soil, every thing I saw bespoke the general well being and comfort of the people. The two countries presenting a striking contrast of the opposite effects of virtue, industry and intelligence on the one hand, and of vice, indolence and ignorance on the other.

(To be concluded in our next.)

From American Quar. Journal of Agriculture and Science.

A BIRDSEYE VIEW OF THE STATE OF AGRICULTURE OF
DIFFERENT COUNTRIES. BY C. M. BEMENT.

EUROPE.—*Face of the country.*—The central part of this continent is in general mountainous. The whole northern part, extending from London and Paris to Razan, and comprising the northern part of France and Germany, the Dutch and Belgian Netherlands, Prussia, Poland, and a great part of Russia, is a vast plain, little elevated above the level of the sea, and scarcely broken by any considerable elevations. There are several elevated plains or

plateaus in Europe, but of no great extent. The Swiss plateau, lying between the Jura and the Alps, has an elevation of from 1,800 to 4,000 feet. Central Spain forms an elevated table land 2,200 feet high, and the central part of Russia forms a similar plateau about 1,200 feet high.

Climate in general.—The climate of southern Europe may be described as mild, and that of the north severe, with long winters and hot but short summers. The climate of the western coast is, however, tempered by the vicinity of the ocean, and the same cause renders it liable to sudden and violent changes. That of the eastern part of the continent is rendered much colder, in corresponding latitudes, by its exposure to the icy winds of northern and central Asia. The heat, brought by the burning winds of the African deserts to the southern countries, is in general tempered by their great exposure to the sea, occasioned by their peninsular formation. The mountains of Switzerland, Spain, and Hungary, also modify the character of the climate in the extensive districts which they cover.

ENGLAND.—Face of the country.—The general aspect of England is varied and delightful. In some parts, verdant plains extend as far as the eye can reach, watered by copious streams. In other parts, are pleasing declivities of gently rising hills and bending vales, fertile in grain, waving with wood, and interspersed with meadows. Some tracts abound with prospects of the more romantic kind; embracing lofty mountains, craggy rocks, deep narrow dells, and tumbling torrents. There are also, here and there, black moors, and wide uncultivated heaths. The general aspect of Wales is bold, romantic and mountainous. It consists of ranges of lofty eminences and impending crags, intersected by numerous and deep ravines, with extensive valleys, and affording endless views of wild mountain scenery.

Climate.—England has an atmosphere of fogs, rain and perpetual changes; yet the climate is mild. The rigors of winter and the heats of summer are less felt than on the continent, under the same parallel. The winds from the sea temper the extremes of heat and cold; the changes, however, are sudden. Westerly and southwesterly winds are most prevalent, and also the most violent. Next are the north and northeast. The perpetual moisture of the air is sometimes unfavorable to the crops, but its general effect is to cover the whole Island with the deepest verdure. The meadows and fields are usually green throughout the winter, and the transient snows that occasionally fall upon them are insufficient to deprive them of their brilliancy. Many kinds of kitchen vegetables, as cabbages, cauliflowers, brocoli, and celery, remain uninjured in the gardens through the winter.

Soil.—Of this there is every variety; but the common constituents of the soil, are clay, loam, sand, chalk, gravel and peat. Mossy soils are very common and extensive in the northern parts, and here are the widest tracts of barren territory. On the eastern coast are

extensive fens and marshes. The most fertile districts are in the centre and south. There are very large heaths and plains, which are nearly unsuceptible of cultivation, and only serve for the pasturing of sheep. On the whole, England may be regarded as not naturally a fertile country.

Agriculture.—Notwithstanding the general inferiority of the soil, England is under such excellent cultivation that the country may be considered as one great garden. Farming, in many parts, is conducted on a great scale, by men of intelligence, enterprise and capital; and the science, as well as practice, of agriculture is carried to a high degree of perfection. In the northern counties, the farms are large and are leased for twenty-one years. In the southern counties, the farms are smaller, and the tenants are often proprietors. The field-pea and the tare are often sown as a field crop. Saffron, which was formerly cultivated in various parts of the kingdom, is now grown almost solely in Essex; another singular product of Essex, is a kind of treble crops of coriander, carraway and teazle; the two first on account of their aromatic seeds, the other for its prickly heads, used by the manufacturers in raising the nap on woolen cloths.

SCOTLAND.—Face of the country.—Two-thirds of the country are mountainous. It is generally considered as divided into two parts, the mountainous regions called the Highlands, in the northern and central part, and the comparatively level country in the south, called the Lowlands. In the north the mountains present nothing to view but heath and rock, with innumerable lakes and pools, darkened by the shade thrown from enormous precipices; the whole forming a landscape wild and desolate beyond conception. In the central parts the aspect of the mountains is less forbidding. In the south is every kind of rural beauty, hills, vales, and cultivated plains.

Climate.—The distinguishing feature in the climate is the excess of moisture. Fogs and drizzling rains prevail in most parts for the greater portion of the year. Considerable snows fall in winter, but are soon melted; sleighs or sledges are never used, but the waters are sometimes so frozen as to permit skating.

Soil.—In many of the valleys or straths, there are tracts which are productive, but the soil is much inferior to that of England. A great part of the country may be considered as absolutely barren. The mountains are naked, and trees of native growth are scarce in every part.

Agriculture.—The articles cultivated are generally the same as in England. Oats are the principal crop, except in the most fertile districts. Potatoes are cultivated somewhat extensively, and in some places hemp.

IRELAND.—Face of the country.—The surface of Ireland is almost entirely level. The general appearance of the country is varied and pleasant, although bare of trees. In some parts, are rich and fertile plains, and in others gentle slopes and waving hills.

Climate.—The climate is damper than that of England, but otherwise similar. Westerly winds are frequent and violent.—Snow is rare in winter, and passes rapidly away. The fields have a green appearance through the year.

Soil.—A great part of this Island is covered with immense bogs, or sterile tracts, producing nothing but heath bog, myrtle, and sedge grass. They form a broad belt across the centre of the Island, widening towards the west. The remainder of the soil is strong; but the moisture of the climate preserves the herbage, and renders the land excellent for pasturing.

Agriculture.—Agriculture is very backward. The cultivators are not generally proprietors of the soil, and studiously avoid any permanent improvement of the land, lest the rent should be raised. The Irish are idle, and their implements of husbandry are very rude. Wheat is not generally cultivated, and what is raised is often inferior. Barley is now common, but oats are raised in a ten-fold proportion to that of any other grain. The Irish staff of life, however, is another article, which is so extensively cultivated as to confer upon this Island the name of the "land of potatoes." This root furnishes to the poor the greatest part of their sustenance. It is remarkable that a plant, brought originally from America, and hardly known in Europe a century ago, should now be so universally cultivated in Ireland, and grow in such perfection there. Even in the United States this vegetable is called the Irish potato; this however, is to distinguish it from the sweet potato of the south. The dairy is the best managed part of Irish husbandry.

FRANCE.—Face of the country.—France generally exhibits a level but not undiversified surface. The most level tracts are in the north. The picturesque beauty of the hilly parts is heightened by the rich and luxuriant verdure of the chesnut trees. In the south the deep hue of the olive gives rather a sombre look to the landscape. From the mouth of the Garonne to the borders of Spain, the coasts consists of a flat, sandy, barren tract, called the Landes, extending thirty miles into the country, and producing nothing but heath, broom and juniper. The remainder of the country is, in general, agreeably diversified with gentle undulations.

Climate.—The air of the northern part is moist, and there are considerable snows and sharp frosts in winter. At Paris, the Seine is sufficiently frozen to admit of skating. In the central part no snow falls, sometimes for many years; frosts seldom occur, and the air is pure, light and elastic. The harvests begin from the latter part of June to the middle of July. The south of France, from the Loire to the Mediterranean, is subject to violent storms of hail and rain which destroy the crops. One-tenth of the crops is yearly damaged by the storms. Thunder storms are frequent and violent; they produce cataracts, which rush down the mountains, burying the meadows under heaps of stone and masses of mud, and cutting the sides of the mountains into deep ravines. In most parts of France frosts are commonly late in spring and early in autumn,

which do great injury to vegetation. The high country of Avergne is bleak and cold, and all the districts of the Vosges are affected by the snow which sometimes continues to fall upon these mountains as late as the end of June.

In the southern provinces the summer is exceedingly hot. The vintage is in September. At the end of autumn violent rains fall; but October and November are the pleasantest months in the year. In December, January and February, a strong northeasterly wind, called the mistral, blows, sometimes with snow, but generally with a clear sky. It is sometimes so violent upon the mountains as to blow a man off his horse. At Avignon, the olive trees are frequently chilled by it. The south of France may be characterized as possessing a mild and salubrious climate. Montpellier, on the shore of the Mediterranean, is celebrated for the purity of its air.

Soil.—France is generally a fertile country, but the soil varies much in different provinces. The northeast is the richest part. There are admirable corn districts along the Seine, Rhine and Moselle. The hills of Champagne and Burgundy produce the most excellent wines. The valley of the Garonne has a warmer soil, but is less productive than that of the northern districts.

Agriculture.—Two-thirds of the population of France are agricultural, and a much greater proportion of the cultivators are proprietors than in most other European countries. The agricultural products of the northern part of the country are corn, pulse and potatoes; of the southern, corn, grapes, mulberries and olives. Besides the common grains of Europe, wheat, rye, oats, and barley, maize is also extensively cultivated. The horses and cows are fed chiefly on clover, lucern and sanfoin, and other artificial grasses, of which no greater quantity is raised than is absolutely necessary. The rotation of crops is little attended to, and fallows still hold a place in French husbandry, which is therefore proportionately less productive than the English. The French are, however, the best wine makers in the world; the principal varieties of the French wines are those of Champagne and Burgundy; the Moselle and Rhenish wines, so called from the rivers upon whose banks they are produced; the hermitage of Dauphiny; and the clarets of the neighborhood of Bordeaux.

SPAIN.—Face of the country.—Spain is an elevated and beautifully picturesque country. It exhibits an alternate of mountain ridges and wide plains, every where watered by rivers and small streams. The hills are covered with vineyards, and the valleys display the most luxuriant vegetation. The southern part looks like a garden in perpetual bloom. In external beauties few countries in the world equal Spain.

Climate.—This country lies in the southern part of the temperate zone. The cold is never excessive, even in the northern parts. In the south the heats of summer would be intollerable but for the sea breeze, which begins to blow at nine in the morning and continues until five in the afternoon. The interior is so elevated as to be

much cooler than might be expected from the latitude. The two bastiles form a raised plain nearly 2,000 feet in height. The sky of Andalusia is pure azure and gold; the inhabitants of Seville affirm that a day was never known when the sun did not shine upon their city. Two kinds of winds are sometimes unpleasant in Spain. The Gallego from the northwest is piercing and cold; the Solano, a southwest wind from Africa, is so hot as to relax the human system and produce giddiness and inflammation.

Soil.—The greater part of the country is fertile, and covered with a luxuriant vegetation. The fruits and plants offer a greater variety than is afforded by any other region of the same extent. The land is every where favorable to the cultivation of the vine. The greater part of Spain may be regarded as naturally the most fruitful country of Europe, but there are extensive wastes in the interior.

Agriculture.—The greater part of the land of Spain belongs to the nobility, the church, the towns, or corporate bodies. The state of agriculture is wretched, and the implements of husbandry are very rude; hardly two-thirds of the productive soil is under cultivation. Hemp and corn are raised in almost all the provinces; olives and the sugar cane are cultivated in the southern parts, and in this quarter may be seen large fields of saffron, rice and cotton. Every part of the country yields wine. The raising of sheep is an important branch of industry, and the wool is distinguished for its fineness. The Merinos or fine woolled sheep, pass the summer in the mountainous districts of Castile and Arragon, and the winter in the plains of Andalusia and Estramadura. They are driven this distance of nearly 700 miles in 40 days, in flocks of 10,000. The mesta or society, composed of the owners of the sheep, has the right to drive them over the land which lies on the route, and to feed them on the pasture where the land is cultivated; the proprietors are obliged to leave a space 250 feet in breadth for their pasturage. The whole number of sheep in Spain is about eighteen millions, more than half of which migrate annually.

PORTUGAL.—Face of the country.—This country has not so great a proportion of mountains as Spain. There are two extensive plains, that of Beira in the north, and that of Alemtijo in the south. The coast is low in the north, but grows high and rocky towards the south. In the wildness and grandeur of mountain scenery Portugal is inferior to Spain, yet in general appearance it is esteemed a more pleasant country.

Climate.—The climate is more agreeable and healthy than in most of Spain. The air of Lisbon is famed for its salubrity, and that city is resorted to by invalids from different countries. The heat of summer and cold of winter are tempered by the neighboring ocean. At Lisbon there are commonly 200 days in the year completely fair. The raining days are not more than 80. When rain falls it is very violent. If October is rainy it is not uncommon to see the fruit trees blossom anew in November.

Soil.—Portugal is a fertile country; the soil is light and easily cultivated. The mountains are mostly barren, but some of them are covered with a fine vegetation.

Agriculture.—Portugal though rich in natural productions, wants the cultivation of industrious hands. The wealth of the colonies and commerce withdrew the attention of the inhabitants from agriculture, which has been for several centuries in a low state. Excellent fruit is raised and exported in considerable quantities, and several sorts of vines of excellent quality are produced; the red port wine is much drank in England and the United States. Although the country affords excellent pastures, grazing is little attended to. Corn is raised in so small quantities that it is necessary to import it.

SARDINIA.—Face of the country.—The country exhibits very diversified scenery. Savoy is an Alpine country, separated by an enormous mountain ridge from the Italian peninsula, and intersected by lofty mountains covered with snow and ice. Piedmont and Montserrat form the western extremity of the wide valley of the Po. The maritime districts are mountainous, and the Island of Sardinia is intersected by several mountain ridges of small elevation.

Climate.—In the valley of Savoy, there is often fine spring weather when the high grounds are covered with snow. In this part, the climate is too severe for southern fruits. The valley of Piedmont is subject to the cold northerly winds from the Alps; yet the air is healthy and the vine flourishes. In the south the Appenines afford a shelter against the northern blasts; here the olive and the fruits of the south prosper. Sardinia has a hot climate; and in the marshy spots, putrid fevers are common in summer.

Soil.—The soil of Savoy is strong and unfavorable to agriculture. The fertile earth lies in a thin strata on the rocks, and is often washed away by the torrents. In Piedmont, Montserrat, and the Milanese are level and rich alluvial tracts. The soil in the Island of Sardinia is extremely fertile; but the canals which formerly drained it are neglected, and many parts have become pestilential swamps.

Agriculture.—The arable land is held by large proprietors, who divide their estates into small portions among farmers. The farmers seldom become proprietors, but in general the land descends from father to son. The proprietor receives half of the product for rent and the use of the cattle which are his property; for the meadows he is paid in money. Part of the tools also belong to the proprietor. The farmers are in general very poor. The landed proprietors are rich. In the Appenines and a part of the Genoese territories, the peasants are proprietors, but their wealth consists in chesnuts, sheep, and olives. Wheat, maize, and other grains, rice, beans, and tobacco, are cultivated. Excellent grasses are

raised, but the making of wine is not well understood. The olive is cultivated along the coast, and Genoa is productive in oil. Piedmont raises annually 20,000 cwt. of silk.

LOMBARDY.—*Climate and face of the country.*—The country is for the most part level, but towards the north is broken by spurs of the Alps. To the west of Padua are the Euganean hills, from 1,500 to 1,800 feet high, of volcanic origin. The climate is mild and healthy; near the Alps it is cold, and even in the other parts the rivers are sometimes frozen in winter, and the southern plants are injured by frost. The heats of summer are tempered by refreshing breezes from the Alps.

Soil.—Lombardy is a level country and consists entirely of an alluvial plain, with one of the richest soils in the world. Near the mountains gravel is mixed with the earth, but almost the whole tract is composed of a deep black mould.

Agriculture.—Agriculture is the chief dependence of the inhabitants, but the implements and operations of husbandry are very imperfect. The artificial irrigation of lands is a striking feature of agriculture in Lombardy; the canals for this purpose are very numerous, and water is thus employed for grass and corn lands and vineyards, and also to flood lands sown with rice. It is also used, when charged with mud, for depositing a layer of manure. The lands in Lombardy are generally farmed on the metayer or half-profit system. The landlord pays the taxes and keeps the buildings in repair, while the tenant provides the cattle, implements and seeds, and cultivates the ground, and the produce is equally divided.

TUSCANY.—*Face of the country.*—Tuscany is admired for its romantic scenery. The boldness, grandeur and rich luxuriance of the country is hardly any where equalled. The Valdarno, or vale of the Arno, is one of the most delightful regions in the world. One half of Tuscany consists of mountains, producing only timber, one-sixth is composed of hills covered with vineyards and olive gardens; the remainder consists of plains.

Climate.—The climate is exceedingly diversified. On the mountains the snow lies for weeks during the winter; in the valleys it scarcely continues a day. Rain is not common, but the dews are copious. On the Apennines, and in the delightful valley of the Arno, the air is always healthy. In summer the southerly winds are very oppressive, and the region of the Maremma is unhealthy.

Soil.—The vale of the Arno is rich and well cultivated. The soil on the Apennines is strong. The coast is low, sandy, and in parts swampy. In the southern part begins that desolate region called the Maremma, the soil of which consists of white clay impregnated with sulphur and alum, and emits consequently mephitic vapor. The malaria, or unhealthy exhalations of this region have obliged the population to emigrate, or swept them off by disease.

In those parts which are cultivated, the peasants from the moun-

tains come down to gather in the harvest, but they often fall victims to the insidious air. This region extends from near Leghorn to Terracina, about 200 miles, and from the sea to the foot of the Appenines, from 25 to 30 miles.

Agriculture.—Corn, wine and oil, are common productions. The valley of the Amo is divided into very small farms, separated by rows of trees or small canals. The Maremma pastures great numbers of sheep and horses. Chestnuts are an important production; in some parts they are used for bread.

PAPAL DOMINIONS.—Face of the country.—This territory is intersected by the Appenines. The mountains are as barren as those of Tuscany, and Geno, but higher. The Campagna di Roma is a continuation of the Tuscan Meremma, and is noted for its unhealthy malaria. It exhibits an undulated surface, bare of trees. The Pontine marshes are in the south. The Cæsars and modern Popes have in vain attempted to drain them.

Climate.—The climate is mild, but the mountains are covered with snow from October to April. The Sirocco, or hot wind from Africa, is felt on the shore of the Mediterranean. In the mountainous parts the air is healthy, but in the Maremma on the coast, and in the neighborhood of the Pontine marshes, are pestilential exhalations, which cause fever and ague. The northern parts near the Po are all unhealthy.

Soil.—The soil does not differ materially from that of Tuscany. The oranges and lemons produced in the plains of Rome are the best in Italy.

Agriculture.—The lands are commonly held by great proprietors. In the plains of the Po, cultivation is active, but the rest of the country is neglected. The Romans are less industrious than their northern neighbors. The vine and olive grow every where. Onions are raised in immense quantities in the marshes of Ancona. Hemp, saffron and beans are extensively cultivated.

[Communicated for the Southern Agriculturist.]

AN ADDRESS

Delivered by H. S. King, before the Agricultural Society of St. Paul's, at their annual meeting in April last. Published by order of the Society.

Mr. President and gentlemen of the Society:

In rising to address you, I do so under the most painful feelings of diffidence; for when I look around me, I see so many better qualified than myself to express their opinions on the subject of agriculture, (having had years of experience, I was going to say, before I was born, but certainly before I knew the first principles of cultivating the soil,) that I am almost persuaded to take my seat. Fully aware that my efforts must prove almost a failure, still, as a member of the Society, I have felt it my duty to comply

with your request. After the able addresses of the gentlemen who have preceded me, I have not the presumption to suppose, that I can add any new suggestions on this interesting subject. My purpose will be, confining myself strictly to agriculture, to furnish you with the results of my own short experience; and in doing so, I shall endeavor to be as plain and practical as possible. This being my design, its successful accomplishment is all that I hope for or desire.

As to the cultivation of *long cotton*, which most of us are interested in, there is such a variety of modes of cultivation, and such a difference of opinion as to the proper one, owing to the difference of soil each planter has to contend with, (the same experiments, producing different results, which lead so many astray,) that the planter's first object should be to endeavor to find out what mode of culture suits his soil, and what manures and the proper and most beneficial way of applying them. He should endeavor carefully to attribute his failures to the right cause, or his crops will not improve. Some planters condemn the use of the plough in their cotton lands: this is not experience, but theory has led them astray; and this most useful implement is never brought in use to assist the laborers, because the planter has never gone to the trouble to plough a few acres to see if there was any difference in the product. Perhaps he did plough his land one year, and it so happened that he made a bad crop, which is laid to the use of the plough, when in all probability it was attributable to some other cause—the want of more manure most likely, or the improper use of the hoe. I contend that in all lands the plough can be used to great advantage before banking, because the laborer can do one-third more with greater ease to himself: also in the first hauling, the double barshear plough can be used with great advantage, by running one furrow, making each alley a drain, and forming the base of the bed, and the plough marking where the hoe is to go; for in no case should the foot of the bed be disturbed, unless in *nut* or joint grass land. These grasses many of our planters in the lower part of the State have to contend against; and there is a variety of opinion as to the best mode of cultivation where they exist. Some contend that the best way is that of planting on a very small bed (or the list;) my experience, however, is the reverse of this. The young plant requires loose earth to shoot its fibres in, therefore when you plant so near the surface, the plant remains "*in statu quo*," for a long time, whereas if planted on a large bed, there is no obstruction, and it commences to grow at once, and therefore gets a start of the grass. Nut or joint grass land should be banked and planted the same day, if possible. Plant thin and not very early in the season, so that the plant may not receive any check. There is no danger in breaking up nut or joint grass lands too much, as in other lands it would be injurious where these grasses do not exist, (I mean for cotton,) for they have such a tendency for binding the land, that there is little or no danger of getting an overgrowth. Stimulating manures should

always be used ; nothing better than a peck of cotton-seed applied under the list, and a few cart-loads of stable manure applied on the list, after the seed has sprouted and well chopped in ; for, as I have stated above, there should be no obstruction to the young plant.

Early thinning is injurious where these grasses exist, for by so doing, you check the plant, and give the grass an advantage. I think the plant should be in five or six leaves before thinning ; then the bed should be ploughed down, leaving but six or eight inches top surface, which should be picked with the hand. The hoe is entirely unnecessary in the first working. I allude here, particularly to nut grass. Let the bed remain in that state for a few days, then throw the furrow back with the plough. Some may think I have said too much on this subject. The only apology which I offer is, that on many plantations, parts of fields are abandoned in consequence of the planter's finding it unprofitable to cultivate these spots. And what can be more awkward to the eye of a planter, than to see parts (and the very best) of a field uncultivated ; for nut grass will not flourish except in such land as are best suited to the cotton plant. I would trespass too long upon the patience of the Society, were I to enter into every particular, as to the best supposed mode of cultivating each crop, viz : cotton, corn, and potatoes ; as to rice, I shall say nothing ; for it would be impossible for me to make any new suggestions to gentlemen engaged in cultivating that great staple. I therefore pass it by in silence.

It has been said and correctly too, that the planters in the lower part of our State neglect every thing on their plantations for the cotton. Should we not endeavor to correct this evil ?—for I must call that an evil which places every thing on a plantation on a short allowance—barely enough to sustain life until the new crop comes in, which is frequently plucked before ripe, to prevent death from starvation. Should we not then plant less cotton and more provisions ? When the planter has to go to market for his provisions, they are always dealt out very sparingly. He says to his driver, "take care of that key,"—I shall buy no more corn,—I care not if you all starve. The laborer is strictly confined to a peck of Tuscarora or gourdseed corn, which is not more than equal to six quarts of our native flint. Can a laboring man or woman go through with a day's work on this short allowance ? I say no: he must either suffer or rob his master, or his master's neighbor—most likely the latter. I say then, it becomes every planter to provide for his slaves in the same proportion as he would for his family. When the master enjoys the luxuries of life, his slave should be supplied with the necessaries thereof. His daily allowance should not be dealt out to him with the hand of a miser, but that of a kind and generous master, remembering that the laborer is worthy of his hire.

I have said that we should plant more provisions. Some one may reply, that we plant enough, but our lands will not produce. Is it because they are not manured or improperly cultivated ? I have

no doubt that failures occur from both causes, for a well manured field, will not yield a crop if improperly cultivated. Some may say, why I work my crop so many times, which is considered quite enough for a corn crop. I ask the planter were those workings given at a proper time? Did you not say to the driver, we must go through the cotton first, although the corn needed the work just at that time? Here the work comes too late, and for want of that timely assistance, one-half of the promised yield is cut off. But the planter attributes the failure to some other cause, therefore, the evil is not corrected; and this will be the case, until failures are corrected by correcting the cause.

In the cultivation of corn, like cotton, when the land is heavily manured, the plant should not be forced too much in its young state, especially when the seasons are forcing; if the season is very dry, it alters the case, for the frequent use of the hoe or plough, (except in extreme cases) supplies the place of refreshing showers, as in no case, if possible, should the young plant be entirely checked in its growth. I allude here, as I have stated above, to heavily manured or strong land.

Poor land, the oftener ploughed the better, until the corn shoots the tassel; the thinning should always be done as soon as the corn is out of the way of birds—this is a very important matter, not to be neglected, as it prevents the corn from running up spindling.

Drainings are nearly if not equally as necessary in a corn as in a cotton field, for we generally select our low lands for this crop. As a proof of this assertion, whenever our cotton suffers from too much rain, and the crops are short, it invariably happens that our crops of corn are short from the same cause.

I now pass on to the *potato crop*, which should be considered by our planters as a very important one; because, during the time of feeding on this most valuable root, every thing on the plantation is in a thriving condition. Many planters place very little value on this root, because there is some difficulty in keeping them. I consider this objection entirely futile, because, with proper management, they can be kept the year round.

I will endeavor in as brief a manner as possible to state my own experience in producing this crop, and the best mode of keep them. The crop is divided into two classes, the root and the slip. I have found that the small potatoes which are put up for seed, keep best by putting them up in ricks—length of rick from east to west—say a rick from fifteen to twenty feet in length should have at least three funnels, to permit the potato to sweat off freely—the funnels should be on the south side, with the mouth sloping downwards to prevent the rain from getting in, and they should be from eight to ten inches in diameter; the puncheons eight feet in length; the upright pieces four feet; there should be two boards nailed together like the ridge board of a house, placed over the puncheons, before the earth is thrown on them, to prevent any thing like a leak, without which, the water is very apt to find its way in at the end of the puncheons.

Every precaution should be taken to prevent them from getting wet, for they will be sure to rot, unless kept dry. One small leak in any part of the rick is likely to destroy the whole for seed, as the rot produced from this cause spreads with great rapidity. It is also very important that a very dry piece of land should be selected for planting the seed, and in no case should they be planted before July, as it has been satisfactorily proved that the seed will keep best if planted late, and should be put up separate from the small potatoes which are picked out of the large ones in harvest. The cellar should be made upon the same principles as the rick, only on a larger scale—the puncheons at least fifteen feet in length—the door on the south side, and made with slats, two inches apart, for I consider the door the most important vent. A cellar made upon this principle will never fail in keeping the potatoes from rot, if there is smoke made night and morning during the cold weather, which is very essential. Many planters put their potatoes up in hills or banks, because there is some trouble in making a cellar, and others think they keep better in them. I have known the small potatoes to keep well in hills, and again, I have known them to prove an entire failure. The great advantage of cellars over any other mode of keeping them is, that the quality of the potato is much better, much sweeter, and greatly preferred by our negroes to those that are kept in hills.

The yam is by far the best to plant as a slip for eating. They are the most nutritious, as they contain more saccharine matter than any other. As food for work animals and milch cows, there is nothing to equal the potato.

I now pass on to give my experience as to the best mode of manuring and cultivating this root. Running pens, is a very common way of manuring—but I have found this sometimes to fail; the danger is they are apt to run to vine; I however, cow-pen a portion of my root crop as it is the best mode of insuring early vines, which is very important; I generally plant my yams on the cow-pened land. Well rotted mould out of the woods, ten cart-loads to the task, is as beneficial a manure as can be applied, both for roots and slips; there should be at least twenty-four rows to the task, for if planted wider, there is a loss of land.

There is no crop that pays so well; for twenty acres well manured and properly cultivated will feed a hundred negroes for seven months, nine seasons out of ten, including mules, horses, hogs, and milch cows, &c. One of our oldest and most experienced planters, never dug his potatoes before the vines were killed, unless the frost held off late. After the 10th of November he harvested them, frost or no frost, as he considered by that time that they had matured. His idea was, that if taken in while in a growing state, they would not keep so well.

The last year I experimented with salt. To thirty acres I applied over one hundred and fifty bushels of rock salt, at an expense of 31½ cts. per bushel, including freight. I used from one to four

quarts to the task-row ; the four quarts, I think, checked the growth too much, judging from the appearance of the plant. I think one quart is quite sufficient to the task row.

After manuring my land with compost, which I strewed from the alley to the top of the bed on one side,—then listing the side first that had no manure, which covered that in the alley,—then listing the other side, which had the manure spread, (by which mode the manure is thoroughly incorporated with the list, and no part of it exposed,) I then strewed the salt on the list. The season being very dry, and my subsoil clay, the crop suffered very much from the continued drought. But when I applied the one quart of salt, the cotton never wilted as much as that which had no salt, and I think made at least one-third more per acre. The very row that the salt stopped on was visible to the eye ; the stalk and burr were of a bright mahogany color, while that which had no salt, presented a dark appearance, and in general had a very unhealthy appearance. Both were manured in the same manner, with the exception of the salt. Many places where I did not use the salt, the cotton died entirely. I am of opinion that salt is of great help in a dry season on high land. I have seen it used on flat or dark land with no apparent benefit.

From what use I have made of *salt in agriculture*, I think it will never fail to pay the planter who uses it on *high, dry, or poor land*, because it acts as a constant stimulant to the plant, and keeps it in a growing state throughout, and prevents the entire check of growth from dry spells which we have to contend against in most seasons. For if the plant stops growing from drought, before it has come to maturity, where there has been a sufficient quantity of manure applied, and takes a fresh growth when the rains set in, it is most likely to cast all, except the large fruit. If, therefore, salt is of great utility in agriculture, the expense is so trifling, that it should not be considered ; for its effects upon the plant is produced by such small doses, that every planter, who cannot get the salt-mud should try the experiment. Let us look at the facts, which prove its great influence upon the fertility of the soil. The use of salt in agriculture is very ancient. The Hindoos and Chinese, from the remotest antiquity have fertilized their fields and gardens with it. The Assyrians (we are told) spread it at some distance around the stems of their palm trees. It is well known that in large quantities it sterilizes the soil ; for we find it stated in the bible that Abimeleck, having taken *Shechem* destroyed that city from its foundations, and sowed with salt the place which it occupied.

In modern times, the English have studied the use of salt. Lord Bacon proved by his experiments, that the use of salt-water was profitable in agriculture. More recently, Browning, Watson and Cartwright, have confirmed, by experiment, the efficacy of salt upon vegetation.

I have said that I have seen salt used upon dark or low lands without any apparent benefit ; but I have no doubt, if it was used

in large quantities, the benefit would be equally as great, as on high dry land, say about four quarts to the task-row; for lands of this description require double the quantity of lime or marl.

There has been much said on the use of marls, but as I have had no experience in the use of this most valuable manure or fertilizer, I will pass it by, hoping, that at a future day, some one experienced in its use, will enlighten the Society as to the best mode of using it.

I have said nothing on the subject of draining, having given my views fully on that subject in the report which I made as Chairman of one of the visiting committees, two years ago.

Before I conclude, I would beg leave to make a few observations to my young friends who are members of the Society, on the subject of close application to business.

It is a very common opinion among persons who have never embarked in agriculture, that the planter's life is a very easy one. To prove the absurdity of this opinion, how few of those who have engaged in the pursuit with those opinions, but have gone backwards at first, until they have found out by experience, that the old saying was a true one, "the master's eye was worth a dozen pair of hands," and that the planter's life was not as easy a one as they had expected. He who attends daily to his business, sees the necessity of still closer application, and that the agent (never mind how honest he may be) cannot feel an equal interest with the owner in his personal concerns. Some think if they ride in their fields twice a day to see that the field-hands have done their work, that there is nothing more for them to do; that they have accomplished their work in taking just enough exercise to preserve health. Are there not some of you who sleep late in the morning?—if so, can you expect your business to go on when you are slumbering in bed? I answer, by experience, no. It was a trite maxim of Dr. Franklin, that he who slept late in the morning, may trot all day after his business, and not overtake it at sun-down. Your work-animals certainly should be fed by sunrise. You may reply, my driver does that; but I ask you, is it the driver's business? His business at that hour particularly is with his people, to see that they have made a fair start; for when the master goes in the field and finds bad work done, he cannot blame his driver who has been all the morning attending to small matters about the premises, which the master should have attended to while he was indulging in bed. I however, do not intend to say, that it is impossible for business to go on, when the master indulges in this way; but I do mean to say, that he must attend to his interests, or make free use of the whip. I ask which is the most proper? I have always contended, where the whip was much required on a plantation, it was because the master neglected to look into his affairs at a proper time.

A prime object with every master should be, to improve the moral and physical condition of his servants. A faithful intelligent servant is above all price; and that which is promotive of his health, happi-

ness, and contentment with his condition, cannot be a matter of indifference. The white race are compelled, by the usages of society and the laws of his country, independent of the influence of religion on his conscience, to the practice of virtue, and incited to habits of honesty and industry. But it is not so with the descendants of *Ham*, doomed by the Almighty to servitude. With his capacities and energies degraded below those which nature has bestowed on the white race, he must ever continue to be the servant. With the strongest attachments to the family of his owner, we find that he has quick perceptions, acute feelings, and is, in the highest degree, susceptible of the mild and gentle affections of our nature.

Destiny seems to have linked his happiness with ours: without us, he could but miserably subsist, and without him, our rich fields would become a waste wilderness. His character must be formed through us, his masters; and it becomes us as men of conscience and of common sense, to inquire, if sanctions of a higher nature than common plantation discipline, can be brought to operate beneficially, on a mind so susceptible of improvement. That this can be done, I need only appeal to some of this audience, who have tried the experiment, or witnessed the results of *religious instruction*. Religion promotes obedience to laws; real piety must ever be an enemy to intemperate habits, and to extravagant hopes. It commands its disciples to revere civil government as the ordinance of God, and to be "subject, not chiefly for wrath, but for conscience sake." That such an influence shall be brought to bear on our domestics, is a consummation devoutly to be desired. Much has been done to effect this end. The interest in the subject had become so universal, that about a year ago a conference of some of the most patriotic and intelligent of our land, was had in Charleston. Reports were received by them from nearly every section of the southern States; and it no longer remains a question, "can the slave be made better, and his master's interests promoted, by imparting to him, orally, religious instruction." The substance of the testimony laid before them is, that it has been most beneficial to both. This may be said to be one of the beneficial discoveries and improvements of the age, and as such, I present it for your consideration.

PRESERVING SWEET POTATOES.

The difficulty of preserving sweet potatoes for seed through winter, in the northern States, is well known. C. Springer, of Ohio, succeeds perfectly by filling a nail keg with alternate layers of wheat chaff and potatoes, and enclosing the whole in a barrel of wheat bran, headed up. This was kept in a cool part of a room, which was not subjected to freezing. When the barrel was filled with wheat chaff instead of bran, the experiment did not succeed so well.

[*Albany Cultivator.*

TABULAR ESTIMATE OF CROPS FOR 1845.

[The Editor of the *Southern Agriculturist*, has received a large Vol. of 1300 pages from Edmund Burke, Esq., the Commissioner of Patents, containing his Annual Report to Congress, for the year 1845, from which we intend from time to time, to extract such agricultural information as is suitable to our Journal. We return our thanks to him for his attention, and as a proof of the value we hold his present, have extracted the "Tabular Estimate of the crop for 1845." We quote from the *Farmer's Cabinet* a few observations on the subject.]

The patent office is now regarded as the general head and representative of the useful arts and industrial interests of the country, and this volume necessarily embraces a great amount of information on these matters. The industry and enterprise and good judgment of the present Commissioner, as well as of his predecessor, have swept over a large field, and gathered within the compass of a Report, a vast number of facts and statements, both valuable and interesting.

Twelve hundred and forty-six patents were applied for during the past year, about two hundred more than for 1844. The receipts of the office were nearly \$43,000, while its expenses were such as to leave a balance of more than \$11,000 in its favor.

In our last volume, tabular estimates were given of the crops of the different States, for the year 1844. Similar tables taken from the Report, are appended, showing the results of cultivation, &c. for 1845. While the population of our country is steadily on the increase, and the general prosperity is steadily augmented, we find apparent, a variation from year to year, in the amount of agricultural productions, though we must not forget to bear in mind that the numbers given, are all of them, but approximations to the truth. Thus the crop of corn is stated to have been in 1845, four millions of bushels less than in 1844, and nearly eighty millions less than in 1843. The crop of wheat, however, was by several millions of bushels, heavier than in either of those years, while that of hay was very considerably lighter. The production of silk, appears to be gradually on the increase. Tennessee, Ohio and Kentucky were last year the three greatest corn growers, while New-York, Ohio and Pennsylvania grew the most wheat. Louisiana makes more than three times as much sugar, as all the rest of the States together, (but does not cultivate wheat, and is the only State so returned,) and New-York and Vermont are the next heaviest producers of this article. South-Carolina excels in her rice, while Georgia is only inferior to Mississippi in the making of cotton. New-York is far the largest producer of potatoes and hay, but Kentucky greatly exceeds all in the growth of tobacco. Thus with our varied climate from Maine to Florida, and from the sea to the rocky mountains, Providence has given us every facility for the growth and production of every necessary of life, and of every luxury that can at all minister to our comfort. We dwell truly in a south land. While the soil and climate of one district may direct the agriculturist to some particular objects, those of other districts, favor the cultivation of what is not less essential to the general convenience, though of a very different character.

State or Territory.	Population in 1840.	Present es- timate, pop.	Wheat. bushels.	Barley. bushels.	Oats. bushels.	Rye. bushels.	Buckwheat. bushels.	Indian corn. bushels.	Potatoes. bushels.	Hay. tons.	Flax & Hemp. tons.
Maine.....	501,973	575,500	502,000	273,000	1,564,000	165,000	63,000	1,912,000	8,613,000	1,877,000	—
New-Hampshire...	284,574	291,500	647,000	123,000	1,942,000	422,000	154,000	1,828,000	3,714,000	526,000	—
Massachusetts....	737,699	817,000	241,000	162,000	1,856,000	594,000	126,000	3,028,000	3,038,000	530,000	—
Rhode-Island.....	103,830	120,000	5,000	51,000	200,000	47,000	4,000	731,000	650,000	46,000	—
Connecticut.....	309,978	320,000	114,000	26,000	1,646,000	1,010,000	444,000	2,639,000	1,694,000	458,000	—
Vermont.....	291,948	298,000	854,000	51,000	3,583,000	321,000	300,000	1,728,000	4,926,000	1,189,000	—
New-York.....	2,428,921	2,626,000	16,200,000	3,574,000	23,700,000	3,560,000	3,347,000	13,250,000	21,936,000	3,703,000	—
New-Jersey.....	373,306	409,000	1,050,000	8,500	4,912,000	2,954,000	900,000	7,314,000	1,757,000	282,000	—
Pennsylvania.....	1,724,033	1,960,000	12,580,000	141,000	19,826,000	11,929,000	3,322,000	17,126,000	5,497,000	1,527,000	—
Delaware.....	78,085	79,000	440,000	4,500	822,000	53,000	13,000	2,713,000	155,000	19,000	—
Maryland.....	470,019	485,000	4,834,000	2,700	1,691,000	944,000	109,000	3,723,000	705,000	56,000	—
Virginia.....	1,239,797	1,255,000	11,885,000	84,600	8,888,000	217,000	—	27,272,000	1,839,000	296,000	—
North-Carolina....	753,419	760,000	1,969,000	3,600	2,673,000	48,000	—	14,887,000	2,711,000	67,000	—
South-Carolina....	594,398	600,000	1,163,000	3,600	700,000	64,000	—	8,184,000	2,520,000	16,000	—
Georgia.....	691,392	784,000	1,571,000	11,800	833,000	76,000	—	13,320,000	1,536,000	13,000	—
Alabama.....	599,756	660,000	980,000	7,200	1,527,000	21,000	—	16,650,000	1,635,000	15,000	—
Mississippi.....	375,651	586,000	378,000	1,800	1,189,000	2,000	—	2,167,000	3,040,000	1,000	—
Louisiana.....	352,411	440,000	—	—	—	—	—	8,361,000	1,299,000	26,000	—
Tennessee.....	829,210	910,000	8,340,000	5,500	8,625,000	384,000	26,000	70,265,500	2,256,000	42,000	1,500
Kentucky.....	779,828	835,000	4,769,000	15,400	13,091,000	2,543,000	14,000	54,625,000	1,503,000	123,000	22,500
Ohio.....	1,519,467	1,760,000	13,572,000	219,600	24,447,000	793,000	950,000	57,600,000	4,120,000	1,251,000	500
Indiana.....	685,866	860,000	7,044,000	35,200	13,902,000	221,000	73,000	30,625,000	2,680,000	1,351,000	500
Illinois.....	476,183	722,000	4,563,000	101,200	12,957,000	143,000	99,000	25,584,000	2,631,000	297,000	500
Missouri.....	383,102	510,000	1,525,000	11,000	5,466,000	81,000	19,000	15,625,000	375,000	77,000	12,500
Arkansas.....	97,574	140,000	2,427,000	900	436,000	12,000	—	8,250,000	642,000	1,000	—
Michigan.....	212,267	320,000	7,061,000	197,200	4,815,000	77,000	260,000	4,945,000	4,555,000	214,000	—
Florida.....	54,477	80,000	971,000	20,000	8,000	5,000	—	733,000	255,000	1,000	—
Wisconsin Territory	30,945	100,000	793,000	25,000	1,200,000	8,000	25,000	672,000	938,000	84,000	—
Iowa Territory...	43,112	115,000	793,000	—	681,000	—	14,000	2,028,000	516,000	26,000	—
Dist. of Columbia...	43,712	54,000	15,000	—	12,000	7,000	—	35,000	41,000	1,000	—
Texas.....	17,069,453	19,602,500	106,548,000	5,160,600	163,208,000	27,175,000	10,268,000	417,899,000	88,392,000	14,065,000	37,500

Table continued.

State or Territory	Tobacco. POUNDS.	Cotton. POUNDS.	Rice. POUNDS.	Silk Cocoons. POUNDS.	Sugar. POUNDS.
Maine.....	—	—	—	944	300,000
New-Hampshire....	—	—	—	1,210	2,200,000
Massachusetts....	123,000	—	—	47,110	500,000
Rhode-Island.....	—	—	—	1,250	—
Connecticut.....	794,000	—	—	220,000	50,000
Vermont.....	—	—	—	13,740	10,000,000
New-York.....	—	—	—	7,850	14,500,000
New-Jersey.....	—	—	—	6,240	—
Pennsylvania.....	535,000	—	—	41,370	1,600,000
Delaware.....	—	—	—	5,500	—
Maryland.....	17,929,000	6,000	—	10,240	—
Virginia.....	30,218,000	2,412,000	2,500	9,260	1,700,000
North-Carolina....	10,373,000	40,000,000	3,000,000	3,850	9,000
South-Carolina....	40,000	45,000,000	66,500,000	7,620	30,000
Georgia.....	195,000	205,000,000	14,500,000	3,430	350,000
Alabama.....	341,000	145,100,000	280,000	7,890	12,000
Mississippi.....	193,000	235,000,000	975,000	300	—
Louisiana.....	—	185,000,000	3,800,000	1,570	175,000,000
Tennessee.....	37,109,000	48,000,000	9,000	30,110	520,000
Kentucky.....	63,310,000	1,200,000	17,000	6,970	2,100,000
Ohio.....	7,576,000	—	—	39,370	3,900,000
Indiana.....	3,520,000	—	—	1,150	3,000,000
Illinois.....	1,168,000	270,000	—	4,680	600,000
Missouri.....	13,744,090	200,000	—	290	450,000
Arkansas.....	—	17,000,000	6,500	300	5,000
Michigan.....	—	—	—	1,900	3,000,000
Florida.....	260,000	12,000,000	675,000	590	750,000
Wisconsin Territory	—	—	—	40	300,000
Iowa Territory....	—	—	—	—	150,000
District of Columbia	—	—	—	1,500	—
	187,422,000	936,083,000	89,765,000	486,530	226,026,000

REMARKS ON THE TABULAR ESTIMATE.

In presenting the foregoing tabular estimate, it may be proper, in order to prevent mistake, to repeat what has been stated in the former reports of this office—that no claim is laid to complete accuracy. All that has been attempted has been merely to furnish an approximation, which, although in particulars sometimes rising above, and at others falling short of the actual state of the crops, might still serve, in general, for want of better materials, the purpose of comparison, and form some basis for calculations, in gross, respecting the agricultural resources of our country. To hope to accomplish any thing beyond this, with the means at command at present, would be a vain undertaking. Yet it is believed that the grounds on which the estimate is made, with a readiness at all times to correct errors, and an increasing preparation of experience in the use of the materials, will aid essentially in giving more reliable accuracy. Those who will candidly review the history of the crops, as it has been collated from notices made on the spot, and mark the causes at work to affect them, it is presumed will admit, for the

most part, the justness of our conclusions; and to such it is unnecessary to state the extreme difficulty of arriving at an estimate which will satisfy those who choose some easier method of decision. Various methods have been proposed for reaching the desired object; but, in the absence of an actual census, no better mode than the employment of similar data, yet more extensively gathered and perfected by comparisons, appears to us practicable. * * *

The amount of materials collected during the past year exceeds that of any former year; though we still have to regret, that, on account of no answers to some of the circulars for information, the means for estimate in some sections is less complete than it might otherwise have been. A greater number of the public journals and agricultural papers, both at home and abroad, have been carefully examined, and such information as they contained collated and arranged in such a manner as to form a history of the crops through the season. The advantage of this plan is apparent, as it enables any one to judge, from one period to another, of the causes influencing the staple crops of the country, and affords, in some degree, a criterion by which to arrive at the more correct conclusion as to the amount raised.

In consequence of a census of population in four States, we have been enabled to correct our table of estimated population. These are New-York, Michigan, Illinois, and Georgia. In New-York, directions were likewise given to the marshals to collect the amount of the principal crops raised during the preceding year. These statistics have been procured from the office of the secretary of the State of New-York, and have been made the basis of our estimate for the year 1845. The same has been done, so far as any such data could be obtained, in the case of the other States.

The disinclination of many to communicate the amount of the products of their industry on such occasions, induces a belief that such an estimate will oftener be found to fall below than to exceed the actual amount of the crops so raised. Allowing this cause to operate to some degree, it would tend to approximate our former estimate considerably nearer to the statistics reported on such official authority.

In most cases it has been deemed advisable to give only the round numbers, leaving the fractional parts. This cause sufficiently shows the comparative product, and is as likely as any other to be accurate.

The progress of agricultural knowledge is steadily onward. States are turning with deeper interest to providing means for encouraging the farmers and planters in their respective limits; surveys of the soil and various products are set on foot; and thus, much valuable information is elicited. Men of science are devoting themselves to the illustration of the principles of agriculture, as a science founded on careful experiment. New journals are every year established, and numerous volumes published, designed to convey to the husbandman, planter, and grazier, the orchardist and the

dairymen, the results of investigations at home and abroad. Agricultural societies and farmer's clubs are greatly on the increase; and the numbers who attend their exhibitions, and take a part in their deliberations, shows the deeper interest which is every where awakened in securing the benefit of these auxiliaries, to the correct and profitable arrangement and development of the agricultural industry of the country.

Some advances are likewise making towards the introduction of this science as a subject of common school education and instruction in primary schools, as well as in the establishing of institutions more expressly designed for this particular purpose. No subject is receiving more earnest attention, in all the various periodicals and volumes adapted to the agricultural class, than is that of manures; and the applications of chemical and geological science to this object are daily becoming more important and useful.

New enterprise, too, has recently been directed towards the improvement of stock, by the importation and crossing of breeds, and particular care to note their adaptation to the different sections of the country.

Every year introduces, likewise, to the agriculturist, some additional implement by which his labor is lessened, or better done; and, while he is thus saved somewhat of the sweat of his brow, he is likewise assured of greater profit from the fruits of his industry. There is, thus, mutual dependence as to the pursuits of the farmer and those of the artisan. Mechanical industry presents him with the results of her inventive genius. With these in hand he forces from the earth her increase, and, by the blessing of a kind Providence, is enabled to pour out to the community around him a lavish of nature's bounties, such as no other country can so universally boast. In view of his own improved tools and means of culture, he may well wonder how his fathers, and even himself, formerly, could have been satisfied with the ruder ones which have been so long in use. We are, however, but at the commencement of these better things.

The researches of each successive year, and the multiplied facilities added to the train of conveniences enjoyed, authorize the belief that the advancement of agricultural industry is destined far to exceed any that has yet been seen. * * * * *

As commerce and enterprise open to us the vast empire of China, and the interior of South America, it would not be surprising if there should be discovered there products well adapted to sections of our own country, but which are as yet unknown among us. It should, therefore, be an object to keep a lookout for every thing which may tend to benefit the agricultural industry of our country; and even if the boon is gained by the price of numerous fruitless experiments, yet success may often reward diligence and patient effort to accomplish the end.

By a reference to the report of the Commissioner of public lands, we learn that 1,754,763 acres have been sold during the past year.

Now, although we can by no means assume that all of this, or even the greater portion of it, goes under cultivation at once, it still must be supposed that a part of it must add to the amount devoted to agricultural supply in the States where it is located; and this item deserves notice in forming our estimate of its products.

[Burke's Annual Report for 1845.]

BENEFITS OF SALT AS MANURE.

We have recently been perusing several European articles, detailing experiments made with salt as manure, and from them we have made the following brief synopsis of its utility.

It attracts the humid vapors and repels frost, and thus assists in keeping the land moist in dry weather, and warm in cold. It keeps every thing in the soil in a soft and soluble state, and assists to digest and prepare the food for vegetable nutrition. It destroys many kinds of vermin and weeds, and usually increases the amount of the crop one-fourth to one-third; strengthens the growth of every thing to which it is applied, and brings all crops earlier to the harvest. It generally adds from five to seven bushels per acre to the yield of wheat used in the most moderate quantity, and in all kinds of grain makes more ear and less straw. Mr. George Sinclair obtained at Woburn, on plots of thirty-six square feet, at the rate of seventy to ninety-five bushels of wheat per acre, by the use of salt mixed with other manures. It is found equally beneficial to pasture as well as root crops, sweetening all vegetation, and making it more wholesome for man and beast. It is a great safeguard against blast, rust, mildew, and indeed all the diseases of grain and vegetables.

Salt is inoperative applied near the sea-shore, where salt water spray is already in excess on the land; but every where else it is beneficial. It may be used at the rate of five to forty bushels per acre, though ten or twenty bushels is better. It can be sown broadcast on the land, or be incorporated in the manure or compost heap. Mr. Prideaux informs us, that mixed with lime and its compounds it undergoes decomposition, producing soda or its combination with carbonic acid, or with humus; all more powerful digesters and feeders than the salt itself; and the muriate of lime, which has the strongest attraction for moisture of almost anything known. Salt and lime work vegetable matters to decay quicker than salt alone. With gypsum it will supply soda and sulphuric acid cheaper than any other material, besides the muriate of lime, so valuable for its moistening quality.

[Amer. Agriculturist.]

Bugs on Squashes, are repelled by sprinkling a mixture of soot and sulphur on the young plants while wet with dew in the morning.

BEES.

A METHOD OF TAKING THE HONEY WITHOUT DESTROYING THE BEES.

The common practice of killing the bees, in order to obtain the honey, few can witness without some little compunction; and there is a very simple method of effecting the object without any injury to this most interesting little animal, (which on the score of interest, as well as humanity claims regard.) I beg leave to communicate it through your paper, should you deem it worthy a place in it.

In the evening, when the bees have retired, take the hive gently from the stand; spread a table cloth on the ground; set the hive on it, placing something under to raise it three or four inches; then draw up the corners of the cloth, and fasten them tight around the middle of the hive, leaving it so loose below, that the bees will have sufficient room between it and the hive—then raise the lid of the hive a little, and blow in the smoke from a segar; a few puffs of which, as it is very disagreeable, will drive them down; continue rising the lid gradually, blowing all around, and in a few minutes it will be found that they have gone out of the hive. You may then take off the lid and cut away as much honey as you may think proper. If the operation be performed the beginning of July, you may take nearly all, as there will be time enough to provide a sufficiency for their support during the winter. As soon as you have taken the honey, put on the lid, loosen the cloth, and spread it out, and in an hour or two the bees will have returned to the hive. It may then be replaced on the stand, and on the following day they will be found at work as usual.

This method is very simple and preferable to that sometimes practiced of driving the bees into another hive as you get all the honey, and moreover the new comb which is still empty, and the young bees, not yet out of the cells, are preserved. There is also danger in driving, of their not liking their new habitation, and, in that case, of their sallying out and making war upon their neighbors.

The above method has frequently been practised by myself and others, and we have always found it to do well.

Washington.

A. MELLIS.

[*Am. Farmer.*]

THE BEEHIVE.

The beehive has been the subject of much attention; many of the hives presented, exhibiting only changes of form, without the attainment of any new principle in bee management. It is believed that no effectual means have yet been discovered of preventing the ravages of the bee moth, independent of constant personal attention. Although several of the inventions patented for this purpose, will doubtless, to a considerable extent, diminish the evil. In spite of

all the artifices to decoy the moth into traps and to deposite its eggs where the grub will be so remote from the entrance of the hive as to perish in the attempt to reach the comb; this insect retains enough of its instinct to enter as it is wont with the bee and deposite its eggs directly in the comb, even in the uppermost part of the hive. As the moth exists only at certain seasons, and does its work only at night, it follows that the entire enclosure of the hive at night will exclude the enemy with certainty. For this purpose the hives are sometimes arranged under a tightly jointed house provided with ventilated doors of wire gauze, which are shut regularly at night and opened early in the morning. The objections to this plan are the expense of the fixture and the unfailing attention required to open and close the doors, for a single act of neglect in this duty might result in the destruction of the hives. A curious invention has been patented worthy of mention in this connexion. The patent was granted for combining a hen-roost in such a manner with the door of the hive that the weight of the fowls going to roost would operate through the medium of levers and pulley to close the door of the hive, and the door opened by reverse action in the morning when the fowls leave the roost. If, as the inventor asserts, he can depend upon a certain number of his fowls retiring and rising with the bees, it will prove a valuable labor-saving invention.

We extract the above from the Report of the Commissioner of Patents as something rather curious than useful. This is a nice calculation, and what a fix the poor belated bee is in if his neighbor, the hen, should have taken it into her head to retire a minute before his return; like some unfortunate husband he finds his own door closed against him, without even his pot house to return to, unless indeed he can find a lodging in the bosom of some hospitable flower that has not yet closed its leaves for the night.

Without as many opportunities as the excellent Commissioner, we flatter ourselves that we have heard of a better plan than this; some Yankee, we are told, has invented a hive, the door of which slides up and down in grooves, and is made to weigh a grain or two less than the lightest bee. A string running over a pulley, connects this door with a step inside and out; the bee without much training learns to light or jump upon the step, his weight raises the door, and after a few trials he makes his entrance or exit before the door falls. When the moth tries the same trick he finds he's too light, and "can't come it." Seriously, we heard a gentleman say that this was an excellent contrivance, being perfectly practical and effectual.

[*Editor of Southern Planter.*]

JERUSALEM ARTICHOKE.

Last year I planted 1 peck and raised nearly 25 bushels. This encouraged me to plant 15 bushels the past month, and if the result prove equal to that of last year, I shall get 1,500 bushels. I planted them in rows 30 inches apart, dropping the cuttings one foot apart in each row. The after culture will be the same as with potaoes.

Amer. Agriculturist.

R. L. C.

FRUITS.

According to my observation, horticulturists have experienced as much or more trouble and disappointment with *pears* and *plums* than with any other fruit. Slow to grow, the pear tree seems to lead a precarious life, subject to blight and barrenness, which it is as difficult to account for as to prevent or cure. Yet what fruit have we to excel the seckle pear. From some facts which I have seen but lately, apparently on good authority, I am inclined to think that, like some animals, the pear tree becomes hide-bound, and that like them also good scrubbing and cleaning, to open the pores and promote free perspiration, would greatly contribute to their health. I have lately met with the following statement, which seems highly worthy of attention. It is known to all who know anything of botany, that the bark of a tree when divided horizontally, presents three parts; the *liber*, or inner bark, which lies next to the wood; the cellular tissue, or *parenchyma*, distinguished in the bark of a tree by its fine green color, but colorless in the bark of the root; and lastly, the *epidermis*, or outward bark, which is the universal covering of every part of a tree. Now the experiment to which I refer, to ascertain the effect of removing this rough, hardened *epidermis*, or outside coating, from the trunk and limbs of a very large and aged pear tree, was this: the limbs, or branches of the tree, as is often the case in Europe, were trained espalier fashion, or horizontally along the west wall, the branches extending in the most perfect order on each side of the large trunk. The stem, or body of the tree was cleared of the *rough* epidermis entirely, and the branches on *one* side also were treated in like manner. The branches which extended on the other side of the stem, had only every alternate branch stripped of the rough, hardened epidermis. Previously to this the tree had for many years ceased to bear fruit, except occasionally one or two at the extremity of the upper branches. The first season after the above operation, foliage assumed a more healthy appearance on the decorticated branches, and in the course of the second year many fruit buds were formed, which afterwards produced fruit of very good quality, while the branches which were suffered to remain with their hardened epidermis, continued barren. Adjoining this tree was another of the same age, which was sickly and barren. From this, every alternate branch was cut off and their places supplied by grafts of different kinds of pears, all of which bore well, while the original branches continued barren. Frequent applications of soap-suds would doubtless have secured a yet higher degree of health and fertility. I have observed in the garden of the late John Willis, at Oxford, in Maryland—one of the best practical horticulturists I ever knew—that the bodies of his bearing pear trees were—to use almost the strongest figure I can employ—as smooth, as clean, as polished, and as fresh-looking as the arm of a beautiful young bride when just stripped of its glove to receive the wedding-ring. The truth is, disguise or shy it as we

may, young trees require as much watching and cleaning, washing and nursing, and to undergo as many vermifugent operations as young children do; and those who cannot make up their minds to bestow strict and careful attention upon both, had better make up their minds not to get either the one or the other; for in both cases they well deserve the stigma which should always be affixed to cruel and unnatural parents who wilfully neglect their young ones.

J. S. SKINNER.
[*Farmer's Cabinet.*]

DANGER TO CATTLE FROM CORN-STALKS.

In all the surrounding country here numbers of cattle died last fall, soon after being turned into the stalk fields after the corn was gathered. It is known that some frequently die after thus running in the stalk fields awhile, either from their eating too large a quantity of the late or green stalks, or from their eating the hard stalks which may be indigestible or protrude through the intestines, but as there is no reason why either of these causes should prove so much more fatal than heretofore, it is supposed the dry year was favorable to the formation of that smutty excrescence or fungus that usurps the place of the ear, and being enveloped in a shuck the cattle mistook it for a nubbin and devoured enough of it to produce their death. I lost two valuable heifers both heavy with their first calf. From a post mortem examination, made by my man, they appeared to have died from constipation. Upon inquiry, probably you will find that your farmers have suffered in the same way.

Most respectfully,

WM. A. STAPLES.
[*Southern Planter.*]

CLEAN CULTURE.

It is a fact that ground which is kept from vegetation of any kind, will not dry up so much as that on which a crop is grown. There are many who doubt this, but if they would make a proper examination, their doubts will be removed. Make an experiment—take a piece of ground in the garden, and hoe it over every day, or often enough to keep all kinds of vegetation from starting. Sow another piece adjoining with grass or some kinds of grain. After a drought of two or three weeks, examine both pieces by digging into them with a spade or shovel. The earth of the grass or grain plat, will be found dry like ashes, to the depth perhaps of a foot or more. The other plat will be dried only two or three inches—below that it will be found quite moist. Examine the ground in an orchard in a dry time, and if it is not naturally a wet piece of ground it will be found dry to a great depth. If there is a tree in your corn-field, see if the ground is not much dryer near it than on similar ground away from the reach of its roots. The fact is, the roots of vegetation

bring up the moisture from a greater depth below the surface, than it could be done by simple evaporation. This may be known by noticing how much more moisture is required to support a crop of corn when the stalks are nearly full grown, than in its earliest stages. Now, from all this, we deduce an argument in favor of *clean culture*—that is, a culture which permits no useless vegetation to grow among cultivated crops; the advantage of which would be to give the crop the whole benefit of the moisture and other nutriment of the soil, instead of giving a portion to the worthless weeds. In a dry time, we frequently hear farmers say, "it will not do to work my corn or potatoes, they need all the grass and weeds to keep the ground from drying up." Now this, as we have shown, is all a mistake—the grass and weeds make the ground dry faster and deeper. But it is alleged that corn has been injured by ploughing or working it when the weather was very dry. We admit that this effect may have followed under particular circumstances. That is to say, if corn gets too large before it is worked, injury may be done. The reason is, that the roots have become extended, and the plough cuts off so large a portion of them, that the remainder cannot supply the stalk, and it soon withers. This is the way the "*fired*" corn, sometimes spoken of at the South and West, is generally produced. But it is only when the roots of corn have become widely extended, and are torn and mutilated in the operation of working it, that any such consequence follows. If the crop is worked as it ought to be while it is small, no fears of injury need be entertained.

[*Albany Cultivator.*]

THE INJUDICIOUS USE OF MANURES.

Mr. Editor :—Knowing, as I do, that a large proportion of farmers in this country often throw away their manures when they suppose they are using them as they should, I have thought that an article upon this subject would not be out of place.

In consequence of a want of *chemical* knowledge, agriculturists use their manures without judgment or discretion, and oftentimes to their most decided injury, as I shall proceed to show.

Agricultural chemistry teaches us that a certain class of vegetables, such as grain, requires a greater proportion of nitrogen than others. As nitrogen is not a very abundant article with most farmers, and yet of the highest value to the grain grower, it behooves him to make an economical use of it. If he intends to raise a fine crop of good wheat, it is highly necessary that he should not waste that quantity of that element that he has, or that he can get hold of.

All such crops as potatoes, turnips, beets, pumpkins, cabbages, peas, beans, carrots, &c., including clover, herd-grass, timothy, and the other grasses, need but very little of manures containing nitrogen, as they will receive all sufficient from the atmosphere and rain and snow; while wheat, rye, oats, corn, barley, and buckwheat,

need larger proportions of such substances; each differs from the other, however, as to the quantity needed. Wheat for instance, needs more nitrogen than either of the others, for the formation of the gluten which renders its flour so nutritious. The substances yielding nitrogen most abundantly, are the animal manures, especially the fluid manures, and the dead bodies of animal themselves. In connection with this matter, Liebig, in his work on Agricultural Chemistry, says: "An increase of animal manure gives rise not only to an increase in the number of seeds, but also to a most remarkable difference in the proportion of the gluten which they obtain." Here we have the highest authority for stating the importance of animal manures.

Those farmers, then, who use their animal manures upon those crops that need them not, thereby depriving their grain crops of them, although they cannot well do without them, in a measure throw them away. Such crops as potatoes, turnips, the grasses, &c., thrive as well when given rotten hay, straw, leaves, saw-dust, or swamp-muck, and such substances, as when furnished with the richest animal manures. They supply their proper food, and with a right proportion of the right kind of alkalies or alkaline substances, they can dispense entirely with animal manures, leaving them to be used for the grain crops.

Before leaving this subject it will be well perhaps, to add, that *guano* is often very injudiciously used, and the money spent for it thrown away; bringing thereby odium upon what is deridingly called "book farming." The principal constituents of *guano*, different from most manures, are those which peculiarly fit it for *grain*; and whoever uses it for any other purpose, could save his money by dispensing with it and using cheaper and more accessible manures. I have no doubt that many complaints will be made by those who use *guano* upon vegetables, while those who use it on grain, will be well satisfied with its effects. We shall see.

Your, &c.

CHEMICO.

Wilkesbarre, Dec. 9th, 1845.

[*Farmer's Cabinet.*]

DISEASES OF FRUIT TREES.

Mr. Editor:—I am gratified to find that fruit raisers throughout the country, are realizing the importance of the alkalies in preventing many of the diseases of fruit trees. Almost every newspaper that I pick up, contains a narrative of the experience of some fortunate horticulturist, who has applied the alkalies—lime, potash, soda, or magnesia with a happy effect.

Many however, use the remedy in such a costly form, that I am inclined to enter my protest against it. There is no need of using soda in the form of salt or potash, as it is in soap or ley, or lime in whitewash. I say there is no necessity for using these alkalies in

these forms. They may be applied in the form of ashes or lime. Nor is there a necessity, in most cases, of applying them with a brush to the body of the tree. If the tree be a valuable one, and very much diseased, or infested with insects, such extra labor may be warranted, but in the majority of instances, lime and ashes—even anthracite or bituminous coal ashes, scattered on the ground or slightly dug or ploughed in, for a short distance around the tree, will be just as effective in keeping the tree free from insects and disease, as the more laborious and expensive process of scrubbing the tree with brine or ley, or washing it with a solution of lime. I do not approve of the use of such substances as common salt, guano, nitrate of potash and other highly concentrated manures, when the more common and cheap forms of alkaline substances will answer the same purpose just as well. It is a waste of means, which might be profitably applied in other ways. Besides, lime and ashes are more safe applications than salt, guano, &c., there is not so much danger of killing the trees by an excessive use of them.

I attribute many of the diseases of fruit trees to the same cause which produces the "potato rot," viz: *a superabundance of carbonic acid*. This extra carbonic acid gives to the sap of the tree that peculiar quality which renders it the proper nutriment of the cryptogamic* plants, the seeds of some of those cryptogamic plants are present and finding their proper nutriment, they take root and grow, producing the mossy appearance on the trunks and branches. If an alkaline substance be given to the tree, the sap takes it up and it is thereby rendered fit for the tree, and unfit for the cryptogamic plant, and the consequence is the cryptogamic plant dies, and the trunk of the tree becomes clean, and the tree itself assumes a healthy and vigorous appearance. When the sap is unhealthy it becomes by means of the saccharine fermentation, perhaps, sweet and pleasant to the taste; it is then the favorite food for many insects, and they are not slow in availing themselves of it—but when the alkali gets into the sap, it becomes insipid, and the insects turn from it with disgust; while the tree, which before was sickly, now assumes the lively and fresh appearance of health.

I may be mistaken in these views, Mr. Editor, but I think I am not—at all events, there is abundant evidence in our newspapers that alkaline manures have been effective in ridding the trees of disease and insects. I could quote numerous testimonials, but perhaps it is unnecessary.

Yours, &c.

CHEMICO.

[*Farmer's Cabinet.*]

Wilksbarre, June 8th, 1846.

Hen Houses—Keep them clean and well whitewashed. Supply the nests frequently with fresh hay, straw or leaves. This will prevent the accumulation of lice, those great pests of poultry.

*The principal orders of plants of the cryptogamic class are *ferns*, *mosses*, *hepaticæ*, *lichens*, *algæ* and *fungi*.

FLORIDA SUGAR.

We have received from Dr. A. G. Teague, of this District, who has been recently on a visit to Florida, a sample of sugar, manufactured on the plantation of Capt. John Lipscomb. The sugar is of fine grain and of light color. It is quite a superior article. Also, a sample of sirup made from the sugar cane. We think it equal to any that we have ever seen.

We have also received from Dr. Teague, a sample of tobacco, grown from the Havana seed. It is of very fine texture, and is of the quality suitable for the manufacture of the best segars. We have seen several segars made from it; one of them nine inches in length. This would make quite a handful and mouthful for some of our smokers. The tobacco was grown on the plantation of Col. W. E. Kilcrease, formerly of this District, but now a resident of Gadsden county, Florida.

[Edgefield Advertiser.]

HOGS.

S. Long, in the *Prairie Farmer*, says he once lost a number of valuable hogs soon after giving them *sweet whey*. They became swollen and died. Whey if left to sour, or mixed with sour swill, is harmless. He also cautions against giving them brine in which there is saltpetre.

NEW ENGLAND FARMER.

The *New England Farmer* is discontinued. We regret that we no longer find that valuable paper among our exchanges; but all things here have their day, and come to an end. It has lived longer than most of its contemporaries. It was established in 1822 by Thomas G. Fessenden, who continued its Editor, until his death in 1837. The cause of agriculture has been ably advocated, and its interests promoted by this paper, and its editor, Joseph Breck, may enjoy the satisfaction of believing that it did not "outlive its usefulness."

[Farmers Cabinet.]

At the Anniversary Meeting of the *St. Andrew's Agricultural and Police Society*, the following officers were elected for the ensuing year:

PAUL C. GRIMBALL, *President*.

DR. R. LEBBY, *Rec. Secretary and Treasurer*.

W. M. LAWTON, *Corresponding Secretary*.

Agricultural Committee.—D. C. Jeffords, J. M. Lawton, Capt. John Rivers.

Police Committee.—W. S. Godber, Rawlins Rivers, Joseph B. Hinson.

TO OUR SUBSCRIBERS.

We shall continue to publish the names of those generous patrons, who pay us for the *Southern Agriculturist*, because we think they are supporting a work of public utility, and performing the part of patriots. In order to assist those at a distance who have not complied with our frequent calls, we insert a method by which we may get our dues through the Post-office. An order on the Postmaster in Charleston, will be thankfully received; the following is the form:

P. O., ——— (Date.)

SIR,—Please pay the Publisher of the *Southern Agriculturist*,
——— dollars, it being the amount this day deposited by A. B. as
subscription money for said paper.

(Signed,)

C. D., *Postmaster.*

To the Postmaster at Charleston.

Next, a notice to the Postmaster on whom the order is drawn:—

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SIR,—Mr. A. B., has this day deposited in this office ———
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Respectfully, yours,



C. D., *Postmaster.*

To the Postmaster at Charleston.

This should be sent under frank to the Postmaster at Charleston,
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Ed. Barnwell, Junr.	1846 Miss Harriet Pinckney,	1846

TO OUR CORRESPONDENTS AND READERS.

In this Number will be found the first part of Mr. Poinsett's Address, delivered before the State Agricultural Society, at Columbia, S. C., in November last; its publication in this Journal has been delayed from various causes; we were prevented from inserting the whole by its very great length, as it would have precluded several other articles of interest to our section of country.

The Address by Mr. H. S. King, before the Agricultural Society of St. Paul's Parish, at their annual meeting in April, is inserted at the request of the Society, and several of our patrons. We recommend it to the attention of our readers.

We have been favored with a copy of the Report of the Commissioner of Patents, E. Burke, Esq., from Washington, from which we intend from time to time, to make such extracts as may be of advantage to our patrons. In this Number we have extracted the Tabular Estimate of the crop of 1845, which will be found to contain much useful information.

There have been several articles promised us. We should be glad to receive them in time for the next Number.

NOTICE.

We have been informed, by a Planter, who resides near the city, that he can supply persons wishing to *purchase* from his Stock of CATTLE, SHEEP and HOGS, with those of the best breed. Having imported a very extensive Stock of the newest varieties. His terms are moderate. Apply at the office of the Southern Agriculturist, No. 4, Broad street.



A TREATISE ON MILCH COWS:

whereby the quantity of milk which any cow will give may be determined, &c. By M. F. Guenon; translated from the French, by N. P. Trist, Esq. with introductory remarks and observations on the Dairy. By John S. Skinner, Editor of the Farmers' Library. Illustrated with numerous Engravings.

July 1

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